

B. Claims

The present Amendment has been prepared in accordance with a revised format established by the U.S. Patent and Trademark Office as set forth in the O.G. Notice 1267 Off. Gaz. Pat. Office 106 of February 25, 2003.

Please amend claims 1-14 as follows. In accordance with the revised amendment format, a complete listing of all the claims appears below; this listing replaces all earlier amendments and listings of the claims.

1. (Currently Amended) A conductive organic compound ~~device~~, device comprising:

a pair of oppositely spaced electrodes, and

a carrier transporting layer disposed between the electrodes and in contact with one of the electrodes;

wherein the carrier transporting layer comprises a conductive organic compound having a π -electron resonance structure in its molecule, and the π -electron resonance structure plane of the conductive organic compound in the carrier transporting layer is aligned substantially parallel to surfaces of the electrodes.

2. (Currently Amended) A conductive liquid crystal ~~device~~, device comprising:

a pair of oppositely spaced electrodes, and

a carrier transporting layer disposed between the electrodes and in contact with one of the electrodes;

wherein the carrier transporting layer comprises a conductive liquid crystal having a π -electron resonance structure in its molecule, and the π -electron resonance structure plane of the conductive liquid crystal in the carrier transporting layer is aligned substantially parallel to surfaces of the electrodes.

3. (Currently Amended) An organic electroluminescence ~~device~~, device comprising:

a pair of oppositely spaced electrodes, and

a carrier transporting layer and a luminescent organic layer disposed in lamination between the electrodes so that the carrier transporting layer is disposed in contact with one of the electrodes;

wherein the carrier transporting layer comprises a conductive liquid crystal having a π -electron resonance structure in its molecule, and the π -electron resonance structure plane of the conductive liquid crystal in the carrier transporting layer is aligned substantially parallel to surfaces of the electrodes.

4. (Currently Amended) ~~An~~ The electroluminescence device according to Claim 3, wherein the luminescent organic layer and the carrier transporting layer comprising a conductive liquid crystal have been formed by vacuum deposition.

5. (Currently Amended) ~~An~~ The electroluminescence device according to Claim 3, wherein the substantially parallel alignment of the π -electron structure plane of the conductive liquid crystal in the carrier transporting layer has been achieved by a heat treatment of the device.

6. (Currently Amended) ~~An~~ The electroluminescence device according to Claim 4, wherein the luminescent organic layer is in an amorphous state.

AI 7. (Currently Amended) ~~An~~ The device according to any one of Claims 3 to 6, wherein the conductive liquid crystal is a discotic liquid crystal.

8. (Currently Amended) ~~An~~ The device according to Claim 7, wherein the conductive liquid crystal is in a discotic disordered phase or a liquid crystal phase having a lower order than the discotic disordered phase.

9. (Currently Amended) ~~An~~ The device according to any one of Claims 3 - 6, wherein the conductive liquid crystal is a smectic liquid crystal.

10. (Currently Amended) ~~A~~ The device according to Claim 9, wherein the conductive liquid crystal is in a smectic E phase or a liquid crystal phase having a lower order than the smectic E phase.

11. (Currently Amended) A conductive liquid crystal ~~device~~, device comprising:
a pair of oppositely spaced electrodes, and
at least one conductive liquid crystal layer formed by vacuum deposition of a conductive liquid crystal and assuming a liquid crystal state and an amorphous layer formed by vacuum deposition of a conductive organic compound and contacting the conductive liquid crystal layer, respectively disposed between the substrates.

12. (Currently Amended) An organic electroluminescence ~~device~~, device comprising:
a pair of oppositely spaced electrodes, and
at least one conductive liquid crystal layer formed by vacuum deposition of a conductive liquid crystal and assuming a liquid crystal state and an amorphous layer formed by vacuum deposition of a conductive organic compound and contacting the conductive liquid crystal layer, respectively disposed between the substrates;
wherein either one of the conductive liquid crystal layer and the amorphous layer is a luminescence layer.

13. (Currently Amended) ~~An~~ The electroluminescence device according to Claim 12, wherein the conductive liquid crystal is a discotic liquid crystal in a discotic columnar phase.

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14. (Currently Amended) ~~An~~ The electroluminescence device according to Claim 12, wherein the conductive liquid crystal is a smectic liquid crystal in a smectic phase.
